

REMARKS**1. Request for Continued Examination:**

5

The applicant respectfully requests continued examination of the above-indicated application as per 37 CFR 1.114.

2. Rejection of Claims 20, 21, and 23-28 under 35 U.S.C. 103(a):

10

Claims 20, 21, and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's prior art figure (APAF) in view of Yamazaki et al. (US 6,677,613 B1).

In re claim 20, the APAF 7 shows a microdisplay pixel cell device comprising a semiconductor substrate defined with a plurality of active areas at least one gate (52), the gate covering a portion of the active area, at least one source/drains (63/64), the source/drain being in the active area, and a first dielectric layer (66) the first dielectric layer covering the gate and the source/drain. The first dielectric layer comprises at least one row select contact plug (68) to electrically connect to the gate and at least one row select line, the row select line being atop the first dielectric layer, the row select line being electrically connected to the gate through the row select contact plug. There is at least one pixel cap top plate (42) on the first dielectric layer, at least one capacitor dielectric layer (45), the capacitor dielectric layer being atop the surface of the top plate; and at least one pixel cap bottom plate (54). At least one first contact plug is comprised in the first dielectric layer for electrically connecting the source and the top plate (APAF 1, and pg. 2, para. [0007]). The APAF 7 shows all of the elements of the claims except the second dielectric layer being atop the first dielectric layer. Yamazaki et al. shows (figs. 1A-3) a pixel cell device comprising a first dielectric layer (125) formed over a gate (109), and a second dielectric

layer (134) formed on the first dielectric layer. Yamazaki also shows a pixel cap bottom plate (139) being atop the second dielectric layer and covering a capacitor top plate (135) and a capacitor dielectric layer (135). With the capacitor being formed simultaneously being formed
5 with the light shielding layer, the area of the pixel electrode could be reduced and a sufficient capacitance could be provided (col.9, lines 29-35). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pixel device of the APAF by adding a second dielectric layer as taught by Yamazaki so
10 that capacitor top plate can be simultaneously be formed with a light shielding layer to ultimately reduce a pixel area and form a sufficient capacitor.

In re claim 21, the APAF 7 shows that the gate comprises a gate oxide layer (44), a polysilicon layer or a metal silicide layer.
15 In re claim 23, the APAF 1 discloses (pg.2, para. [0007]) that at least one second contact plug (145) is comprised in the first dielectric layer and the second dielectric layer for electrically connecting the drain to a video data line.

In re claim 24, the APAF 7 discloses (pg. 4, para. [0014]) that the row select line is composed of a metal and is used as a scan line of the microdisplay.
20

In re claim 25, the APAF 7 discloses (pg. 4, para [0016]) that both the bottom plate and the top plate are composed of a metal.

In re claim 26, Yamazaki et al. discloses (col. 6, lines 43-52 and col. 25 9, lines 1-7) that both the bottom plate and the top plate are composed of titanium (Ti), titanium nitride (TiN), aluminum (Al), copper (Cu) or an alloy of above-mentioned materials.

In re claim 27, the APAF 7 discloses (pg. 2, para. [0007]) the pixel cell comprises two gates, two common drains, four sources, four top plates and one bottom plate stacking in sequence from bottom to top.
30

In re claim 29, the APAF 7 discloses (pg. 2, para. [0006]) that the microdisplay is reflective liquid crystal on silicon (LCOS) display.

Response:

First, claim 20 is amended based on the disclosure of the present
5 application, and specifically, based on Fig. 8 and Fig. 14. Claim 27 is merged into claim 20 to overcome this rejection. No new matter is included.

Second, the applicant intends to point out the difference between
10 the amended claim 20 of the present application and applicant's prior art figure (APAF) in view of Yamazaki et al.'s disclosure. As disclosed in the amended claim 20 of the present application, there are two obvious differences between applicant's prior art figure (APAF) in view of Yamazaki et al.'s disclosure and the present application. In the present
15 application, each of the pixel cell 100 (the pixel cell 100 can be referred to Fig.8) comprises a transistor block 108, four sources 215, two drains 216, and a pixel capacitor, including four pixel cap top plates 110 and one pixel cap bottom plate 112, disposed atop the transistor block 108.

20 According to applicant's prior art disclosure, such as shown in a layout of the prior art LCOS display pixel cell 10 in Fig. 1, the prior art LCOS display pixel cell 10 comprises a transistor block 18, two pixel cap top plates 20 and one pixel cap bottom plate 22 disposed at either side of the transistor block 18. The two pixel cap top plates 20 and the
25 pixel cap bottom plate 22 form a pixel capacitor at either side of the transistor block 18, instead of atop the transistor block 18.

In addition, neither applicant's prior art nor Yamazaki et al.'s disclosure teaches the concept of covering four pixel cap top plates with
30 one pixel cap bottom plate, as is provided in the amended claim 20.

From the above discussion, the applicant believes that the amended

claim 20 of the present application is absolutely different from either the applicant's prior art figure or Yamazaki et al.'s disclosure. One of ordinary skill cannot combine the applicant's prior art figure with Yamazaki et al.'s disclosure to accomplish the present application, either. Reconsideration of the rejection over claim 20 is hereby requested.

- As claims 21, 23-26, and 28 are dependent upon the amended claim 20, they should be allowed if the amended claim 20 is allowed.
- 10 Reconsideration of the rejection of claims 21, 23-26, and 28 is therefore requested. Claim 27 is canceled and therefore no longer in need of consideration.

3. Introduction to new claims 29-37:

15

Claims 29-37 are introduced based on the amended claims 20-28 to emphasize the outstanding features of the present invention. Claims 29-37 are entirely supported by the disclosure, and specifically, by Fig. 8 and Fig. 14, for instance. No new matter is introduced.

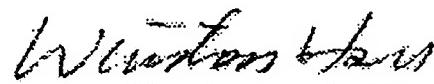
20

Claim 29 is added to emphasize the features such as a plurality of pixel cap top plates are formed atop a plurality of transistors, and at least one pixel cap bottom plate are formed to cover the plurality of pixel cap top plates. Since neither applicant's prior art nor Yamazaki et al.'s disclosure teaches these features, the applicant believes that claim 29 is absolutely different from either the applicant's prior art figure or Yamazaki et al.'s disclosure. One of ordinary skill cannot combine the applicant's prior art figure with Yamazaki et al.'s disclosure to accomplish the present application, either. Consideration of claim 29 is hereby requested.

As claims 30-37 are dependent upon claim 29, they should be

allowed if claim 29 is allowed. Consideration of claims 30-37 is therefore requested.

5 Sincerely yours,



Date: 12/20/2004

Winston Hsu, Patent Agent No. 41,526

10 P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

e-mail : winstonhsu@naipo.com

(Please contact me by voice mail if you need a telephone communication.)

15